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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR    | ATTORNEY DOCKET NO.     | CONFIRMATION NO. |
|---|-------------|-------------------------|-------------------------|------------------|
| 10/076,062  | 02/13/2002  | Jean-Louis De Bougrenet | E30.12-0001             | 8505             |
| 7590  | 04/16/2004  |                         | EXAMINER                |                  |
| Robert M. Angus<br>Westman, Champlin & Kelly<br>International Centre<br>900 Second Avenue South, Suite 1600<br>Minneapolis, MN 55402-3319 |             |                         | WOOD, KEVIN S           |                  |
|   |             |                         | ART UNIT                | PAPER NUMBER     |
|   |             |                         | 2874                    |                  |
|   |             |                         | DATE MAILED: 04/16/2004 |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                          |                     |
|------------------------------|--------------------------|---------------------|
| <b>Office Action Summary</b> | Application No.          | Applicant(s)        |
|                              | 10/076,062               | DE BOUGRENET ET AL. |
|                              | Examiner<br>Kevin S Wood | Art Unit<br>2874    |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,2,5-7,9,11-16 and 18-20 is/are rejected.
- 7) Claim(s) 3,4,8,10 and 17 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 13 February 2002 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0502.

- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because Fig 9-11 are informal. These drawing are acceptable fore examination purposes only, new formal drawings will be required when the application is allowed.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 13 recites the limitation "said attenuation means" in the 4<sup>th</sup> line. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 5-7, 9, 12-16 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Application Publication No. 11-052339 to Katsuhiko et al.

Referring to claims 1, 12 and 14, Katsuhiko et al. discloses all the limitations of the claimed invention. Katsuhiko et al. discloses a process for manufacturing an attenuation device including: expansion of the optical core (101) of a first and second single-mode fiber (105,108); assembly of the first and second fibers facing each other, in a capillary containing liquid crystal (103); polymerization of the liquid crystal, to produce an attenuation element. See Fig. 1 and its respective portion of the specification.

Referring to claims 2 and 9, Katsuhiko et al. discloses all the limitations of the claimed invention. Katsuhiko et al. discloses a process for manufacturing an attenuation device including: depositing an electrode (102) over at least one portion of the periphery and over at least one portion of the end of each of the fibers. Katsuhiko et al. also discloses that the electrodes (102) are transparent and conductive. See Fig. 1 and its respective portion of the specification.

Referring to claims 5 and 6, Katsuhiko et al. discloses all the limitations of the claimed invention. Katsuhiko et al. discloses a process for manufacturing an attenuation device including: the liquid crystal is a polymer dispersed liquid crystal, where the polymer dispersed liquid crystal is a nematic liquid crystallite (201) with negative anisotropy. See Fig. 2 and its respective portion of the specification.

Referring to claim 7, Katsuhiko et al. discloses all the limitations of the claimed invention. Katsuhiko et al. discloses a process for manufacturing an attenuation device including: the liquid crystal is a polymerized by UV radiation. See Fig. 2 and its respective portion of the specification.

Referring to claim 13, Katsuhiko et al. discloses all the limitations of the claimed invention. Katsuhiko et al. discloses a process for manufacturing an attenuation device including: the inserting of the attenuation means for controlling the attenuation means. The hole (110) is an insertion means that allows for the insertion of the attenuation means (the liquid crystal). See Fig. 1 and its respective portion of the specification.

Referring to claims 15, 18 and 20, Katsuhiko et al. discloses all the limitations of the claimed invention. Katsuhiko et al. discloses an attenuation device including: a first and second single-mode fiber (105,108) with expanded optical cores (101) assembled facing each other, in a capillary containing liquid crystal (103) forming the attenuation means. See Fig. 1 and its respective portion of the specification.

Referring to claims 16 and 19, Katsuhiko et al. discloses all the limitations of the claimed invention. Katsuhiko et al. discloses a process for manufacturing an attenuation device including: depositing an electrode (102) over at least one portion of the periphery and over at least one portion of the end of each of the fibers. Katsuhiko et al. also discloses that the electrodes (102) can be voltage controlled. See Fig. 1 and its respective portion of the specification.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application Publication No. 11-052339 to Katsuhiko et al. in view of U.S. Patent No. 6,445,838 to Caracci et al.

Referring to claim 11, Katsuhiko et al. discloses all the limitations of the claimed invention except for the expansion stage comprising a stage of diffusion of dopants from the optical core of a cleaved single-mode fiber. Caracci et al. discloses an optical filter including two fibers with expanded cores placed to face each other with a filter between them, where localized heating is used to allow diffusion of the core dopant in order to form the expanded cores which reduce the unwanted diffractive effects. It would have

been obvious to one having ordinary skill in the art at the time the invention was made to utilize localized heating to cause diffusion of the dopants from the optical core near the end of the optical fibers, in order to create expanded core fibers that would reduce the unwanted diffractive effects caused when light is coupled between the optical fibers.

***Allowable Subject Matter***

9. Claims 3, 4, 8, 10, and 17, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claims 3, 4, 8, and 17, the primary reason for these claims being allowable over the prior art is the expansion of the optical core of the two optical fibers by assembly and fracture of the fiber.

Referring to claim 10, the primary reason for these claims being allowable over the prior art is a buffer block of step index multimode fiber is added to each of the ends of the first and second fibers.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (571) 272-2364. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KSW



Brian Healy  
Primary Examiner